

**In the Claims:**

Claims 1-10 (Cancelled).

11. (New) A method of forming a copper thin film, comprising:  
supplying a raw material gas into a substrate processing chamber to form a copper thin film  
on a substrate stored in the substrate processing chamber;  
supplying an addition gas into the substrate processing chamber in addition to the raw material  
gas during an initial period of said supplying of the raw material gas into the substrate processing  
chamber, wherein the addition gas comprises one of steam formed by evaporating water from which  
dissolved oxygen is removed, a gas formed by evaporating an alcohol derivative from which dissolved  
oxygen is removed, a gas formed by evaporating a carboxylic acid derivative from which dissolved  
oxygen is removed, and a gas formed by evaporating a  $\beta$ -diketone derivative from which dissolved  
oxygen is removed; and  
after the initial period of said supplying of the raw material gas into the substrate processing  
chamber, stopping said supplying of the addition gas while continuing said supplying of the raw  
material gas.

12. (New) The method of claim 11, wherein said supplying of the addition gas into the  
substrate processing chamber comprises supplying the addition gas into the substrate processing  
chamber from an addition gas-filled gas cylinder connected to the substrate processing chamber.

13. (New) The method of claim 11, further comprising forming the raw material gas by  
evaporating copper hexafluoroacetylacetone(trimethylvinylsilyl)(I).

14. (New) A method of forming a copper thin film, comprising:  
supplying an addition gas into a substrate processing chamber prior to introducing a raw  
material gas into the substrate processing chamber, wherein the addition gas comprises one of steam

formed by evaporating water from which dissolved oxygen is removed, a gas formed by evaporating an alcohol derivative from which dissolved oxygen is removed, a gas formed by evaporating a carboxylic acid derivative from which dissolved oxygen is removed, and a gas formed by evaporating a  $\beta$ -diketone derivative from which dissolved oxygen is removed;

after beginning said supplying of the addition gas into the substrate processing chamber, supplying the raw material gas into the substrate processing chamber to form a copper thin film on a substrate stored in the substrate processing chamber, while continuing to supply the addition gas into the substrate processing chamber;

after an initial period of said supplying of the raw material gas into the substrate processing chamber, stopping said supplying of the addition gas while continuing said supplying of the raw material gas; and

resuming said supplying of the addition gas into the substrate processing chamber at predetermined intervals of time.

15. (New) The method of claim 14, wherein said supplying of the addition gas into the substrate processing chamber comprises supplying the addition gas into the substrate processing chamber from an addition gas-filled gas cylinder connected to the substrate processing chamber.

16. (New) The method of claim 14, further comprising forming the raw material gas by evaporating copper hexafluoroacetylacetone(trimethylvinylsilyl)(I).

17. (New) A method of forming a copper thin film, comprising:

supplying a raw material gas into a substrate processing chamber to form a copper thin film on a substrate stored in the substrate processing chamber;

supplying an addition gas into the substrate processing chamber in addition to the raw material gas during an initial period of said supplying of the raw material gas into the substrate processing chamber; and

after the initial period of said supplying of the raw material gas into the substrate processing chamber, stopping said supplying of the addition gas while continuing said supplying of the raw material gas; and

resuming said supplying of the addition gas into the substrate processing chamber at predetermined intervals of time.

18. (New) The method of claim 17, wherein the addition gas comprises one of steam formed by evaporating water, a gas formed by evaporating an alcohol derivative, a gas formed by evaporating a carboxylic acid derivative, and a gas formed by evaporating a  $\beta$ -diketone derivative.

19. (New) The method of claim 18, wherein said supplying of the addition gas into the substrate processing chamber comprises supplying the addition gas into the substrate processing chamber from an addition gas-filled gas cylinder connected to the substrate processing chamber.

20. (New) The method of claim 17, wherein the addition gas comprises one of steam formed by evaporating water from which dissolved oxygen is removed, a gas formed by evaporating an alcohol derivative from which dissolved oxygen is removed, a gas formed by evaporating a carboxylic acid derivative from which dissolved oxygen is removed, and a gas formed by evaporating a  $\beta$ -diketone derivative from which dissolved oxygen is removed.

21. (New) The method of claim 20, wherein said supplying of the addition gas into the substrate processing chamber comprises supplying the addition gas into the substrate processing chamber from an addition gas-filled gas cylinder connected to the substrate processing chamber.

22. (New) The method of claim 17, further comprising forming the raw material gas by evaporating copper hexafluoroacetylacetone(trimethylvinylsilyl)(I).

23. (New) A method of forming a copper thin film, comprising:  
supplying an addition gas into a substrate processing chamber prior to introducing a raw material gas into the substrate processing chamber;  
after beginning said supplying of the addition gas into the substrate processing chamber, supplying the raw material gas into the substrate processing chamber to form a copper thin film on a substrate stored in the substrate processing chamber, while continuing to supply the addition gas into the substrate processing chamber;  
after an initial period of said supplying of the raw material gas into the substrate processing chamber, stopping said supplying of the addition gas while continuing said supplying of the raw material gas; and  
resuming said supplying of the addition gas into the substrate processing chamber at predetermined intervals of time.

24. (New) The method of claim 23, wherein the addition gas comprises one of steam formed by evaporating water, a gas formed by evaporating an alcohol derivative, a gas formed by evaporating a carboxylic acid derivative, and a gas formed by evaporating a  $\beta$ -diketone derivative.

25. (New) The method of claim 24, wherein said supplying of the addition gas into the substrate processing chamber comprises supplying the addition gas into the substrate processing chamber from an addition gas-filled gas cylinder connected to the substrate processing chamber.

26. (New) The method of claim 23, further comprising forming the raw material gas by evaporating copper hexafluoroacetylacetone(trimethylvinylsilyl)(I).

27. (New) A method of forming a copper thin film, comprising:  
supplying an addition gas into a substrate processing chamber prior to introducing a raw material gas into the substrate processing chamber, wherein the addition gas comprises one of steam formed by evaporating water from which dissolved oxygen is removed, a gas formed by evaporating

carboxylic acid derivative from which dissolved oxygen is removed, and a gas formed by evaporating a  $\beta$ -diketone derivative from which dissolved oxygen is removed;

after beginning said supplying of the addition gas into the substrate processing chamber, supplying the raw material gas into the substrate processing chamber to form a copper thin film on a substrate stored in the substrate processing chamber, while continuing to supply the addition gas into the substrate processing chamber; and

after an initial period of said supplying of the raw material gas into the substrate processing chamber, stopping said supplying of the addition gas while continuing said supplying of the raw material gas.

28. (New) The method of claim 27, wherein said supplying of the addition gas into the substrate processing chamber comprises supplying the addition gas into the substrate processing chamber from an addition gas-filled gas cylinder connected to the substrate processing chamber.

29. (New) The method of claim 27, further comprising forming the raw material gas by evaporating copper hexafluoroacetylacetone(trimethylvinylsilyl)(I).